university of toronto
computing services

# ComputerNews

July/August 81
No 192
ISSN 0315-4661

Digitized by the Internet Archive
in 2018 with funding from
University of Toronto

https://archive.org/details/computernewsjuly192than

# COMPUTERNEWS

**Publisher**

University of Toronto
Computing Services
Toronto, Ontario
Canada M5S 1A1

**Editor**

Thanos Kaponeridis

**Subscriptions**

Subscription changes should be entered on the tear-out form at the back of this issue and mailed to the Information Office, Engineering Annex, Room 206 (or phone 416-978-4990).

**COMPUTERNEWS** is a monthly publication produced by University of Toronto Computing Services. Enquiries or contributions should be directed to the Editor, Thanos Kaponeridis or Assistant Editor, Pat Smith in the Engineering Annex, Room 201 or (416)-978-2066. Layout and typesetting are provided by Kathryn Bourne using UTCS typesetting facilities.

**Cover Story**

This month's cover (photography: Thanos Kaponeridis) shows the social event concluding the 12th OUCC conference, June 2-5, covered in this month's issue.

**Contents**

OUCC 3
The Evolution and Impact of Interactive Computing at IBM Research 3
Computer-Based Education Services at The University of Alberta 4
Issues of Women in Computing 5
Evaluation of University Computer Center Directors 6
Telidon 7
Microelectronics, Computers and The Artist 8
The Evolution of a Reorganization of Computing Services at Stanford University 9
Legal Issues of Computer Abuse 9
Office Automation and The Computer or Recognize That The User Believes That Ignorance is Bliss 11
Unionizing the Computer Centre: Prospects and Problems 12
ACF2 Implementation 13
Update: UTCS Text Processing 17
Statistical Products 18
New Developments - UTCS Sharp APL 19
DUAL1 - A Test Version 20
IPRINT To Replace IBMLST 21
DECUS Canada Symposium Returns To Toronto 22
Report on The Spring '81 DECUS 22
Computers in The Humanities 24
User Exchange Column 25
Civic Holiday Hours of Service 25
Labour Day Hours of Service 25
UTCS Change Committee 26
Letter to The Editor 26
Personnel Changes 28
New Titles in the DCS Library 28
Systems
Directory

Permission is granted to reprint articles from COMPUTERNEWS for noncommercial purposes provided the author, publication and issue are acknowledged.

# OUCC

The 12th OUCC - Ontario Universities Computing Conference - was hosted June 2-5 by UTCS at the Sheraton Centre, Toronto.

Succeeding the 11th OUCC at Queen's University, where the theme was *Interface - how will users be interfaced to the computers of the 1980s?*, the theme of the 1981 conference was *No Black and White Answers.* This theme addressed a phenomenon known to all computer professionals - that an answer often brings with it a new, unexpected set of problems.

The UTCS Program Committee's agenda stimulated both thought and conversation and provided information about the 'soft' issues in computing. The 12th OUCC thus became a forum of exchange - lectures, as well as informal events - that assisted delegates in the search for answers and in the appreciation of new challenges those answers bring.

The following articles cover all lectures presented to the 217 OUCC delegates.

# THE EVOLUTION AND IMPACT OF INTERACTIVE COMPUTING AT IBM RESEARCH

*Walter J. Doherty, Manager, Systems Performance and Technology Transfer, IBM, Yorktown.*

People Communicate
Not Machines
People Think
Not Machines

Walter Doherty of IBM presented an excellent paper dealing with what is called, sometimes vaguely, 'the human/machine interface.'

He pointed out the considerable increase in computing system usage by the IBM research group at Yorktown Heights, a 16 fold increase in 8 years ... twice the penetration rate of television in the 1950s. If this type of growth was limited to IBM, it would not be so significant. But we've seen very rapid penetration of computers into other areas, everything from games to medicine. This was accomplished by a complete rethinking of the 'traditional' past role of the computer.

The basic lesson learned at Yorktown involved an acknowledgment that the human exercises judgement and the computer is merely a 'memory amplifier' and calculator - and little more. The computer is also considered to be a 'simple conduit,' allowing passage of problems and queries between people through the machine. People work on such problems, sending information and results back to other researchers.

This user-friendly approach is implemented by making the user interface as easy as possible. The IBM Yorktown studies indicate that 98% of man-machine interactions are human-limited and the human time has a value of 20 times machine costs. This indicates a far different situation from earlier computing eras when users had to perform mental gymnastics (with attending frustration) to get a job through the system.

continued...

**EVOLUTION AND IMPACT** continued

Technically, a good part of this is accomplished through a great emphasis on user EXEC files, sensible defaults and a considerable effort spent on 'human engineering.' Doherty's talk is important in that it points a finger in the direction computing should and must take.

*Herb Kugel*

# COMPUTER-BASED EDUCATION SERVICES AT THE UNIVERSITY OF ALBERTA

*Dale H. Bent, Director, Computing Services, The University of Alberta*

The University of Alberta moved into the field of computer-based education more than 14 years ago. This pioneering venture led ultimately to the installation of the PLATO educational computing system in the summer of 1980. Dr. Bent was invited to OUCC to give an overview of the University of Alberta's experience.

Many factors make teaching by computer attractive and feasible:

- decreasing cost
- reliability
- the growth of telecommunications and distributed processing systems
- the availability of databases for the testing and evaluation of student performance
- quality courseware
- special devices (special keyboards, audio, video, etc.)
- interactive quality graphics
- powerful authoring systems
- comprehensive instructional design methods
- videodisk
- audio input
- artificial intelligence

Computer-based instruction (CBI) is expected to help resolve several issues in higher education. CBI may alleviate problems of low funding, the rising expectations of students and the growing complexity of information with which students must deal.

Furthermore, computer literacy itself is increasingly a requirement. The university community relies more and more on computers for text processing and printing as well as for virtually all numerical computations. Bent pointed out that 'computer literacy' is now mandatory for undergraduates at Harvard.

Course authoring is a labor-intensive endeavor which should involve team effort, as well as feedback from students. With regard to currently available commercial courseware, there is much inferior material on the market. The few other North American universities that have become involved with CBI are producing good quality courseware.

The PLATO system is powerful, proven and supported and includes comprehensive courseware, graphics and full authoring capability.

Bent estimated that CBI will be essential by 1990. To set it up, an overall institutional commitment is required. The installation process must be expected to take about three years. Suitable management will be needed throughout the entire period.

Because this is a new field, much will be learned from other institutions undertaking CBI installation.

*Terry Farley*

# ISSUES OF WOMEN IN COMPUTING

*Virginia C. Walker, Corresponding Secretary (Acting), Association for Women in Computing.*

As a basis for her testament that women have a valid role to play in computing, Virginia Walker cited some of the many names of women who have made noteworthy contributions to the industry's development.

**Countess of Lovelace et al.**

Ada Augusta, Countess of Lovelace, was historically the most interesting She was the first to conceptualize 'stored programming' and utilized her theory to perform complex Boolean calculations (circa 1835). She also used her theory to handicap racehorses, an undertaking which was apparently not nearly as successful.

Capt. Grace Mary Hopper, US Navy, is probably the best known woman. Capt. Hopper contributed to the development of MARK II, MARK III and MARK IV. But the biggest impact of her work grew out of her conceptualization of computer-compiled programs and in the subsequent design of COBOL. COBOL has probably contributed more than any other factor in making computers a viable tool for business and government. As the 'mother' of COBOL, Capt. Hopper received the *Man of the Year Award* from the Data Processing Management Association in 1969. In 1980 the DPMA appropriately renamed the award *Computer Scientist of the Year.*

Walker described women who contributed to the development of ENIAC, circa 1947. She noted that it was a woman, Betty Schneider, who designed assembler code for the UNIVAC I. She listed many of the contributions women have made in the area of computer research and development to date.

**Womens' Contributions Submerged**

Walker's aim was to demonstrate that the contribution of women in the computing industry is generally not acknowledged. Women lose credit for their work in a variety of ways, one being the gender-free use of initials in technical papers and reports. In addition, there is the fact that so much computer development work went by undocumented, the contribution of women being submerged in the process.

Walker stated that since so many women so emphatically made their mark in the beginnings of the computing industry, this field should be an area where an equal share of female participation at *all* levels is a realistic goal, in contrast perhaps to other areas in commerce and industry.

**A Need For Education**

Walker's talk was factually interesting. However, it might have been an oversight on her part to assume that the audience had educated themselves *at all* about womens' rights issues. It is likely that the historical and sociological background of the 'repression' of women in business and industry is, in general, not acknowledged. To have elaborated on the historical roots of male/female roles and expectations would have been an appropriate introduction. From here, the discrepancies in salaries and, for example, representation of females vs males at managerial levels, could have been explored.

Virginia Walker lectured to a predominantly male audience and this session was less well attended than other first-day sessions. It indicates how much must be done to make people aware of the issues women face in the computing industry.

*Terry Farley*

# EVALUATION OF UNIVERSITY COMPUTER CENTRE DIRECTORS

*James L. Carmon, Director, Computing and Informational Services, The University of Georgia*

Dr. Carmon is the Assistant Vice Chancellor for Computing Services at the University of Georgia. A 20-year career has brought him close to the pinnacle of this university's hierarchy in an amalgamation of 33 institutions throughout the state. Experience provides him with a unique view of the work of computer centre directors and of the way in which they are perceived by the many with whom they interact.

Early in his talk, Carmon called for a show of hands which revealed the presence of a number of computer centre directors and managers.

University computer centre directors, academically on par with principals and deans, are viewed differently from their academic counterparts by university administration. Why? Computer centres usually administer larger budgets than most academic faculties and their jurisdiction is less homogeneous - they cater to *many* specialized (computing) needs. In addition, university administrators are not familiar with complex, computer hardware/software requirements. Accordingly, it is the director's heavy burden to convince administration that his budget requests are justifiable and fair. This is apparently not an easy task.

A director who doesn't 'make waves' might be favourably perceived by university administrators. But the needs of users are various and parochial and usually preclude 'peaceful waters.' The director is expected to outline long range plans, a demand not made on other departments. Directors encounter difficulty in obtaining administrative feedback.

On the other side of the 'fishbowl' in which the computer center director operates is his user community. He must attempt to continually evaluate their ever-changing needs in light of the budget he can realistically hope to obtain.

Carmon reviewed five cases of directors who lost their jobs. The problems they all experienced were rooted in their attempts to satisfy all the needs of a wide variety of users.

As individuals, computer centre directors tend to exhibit lower social needs than their industrial counterparts. Their divorce rate is high; they are often loners; they are unskilled at dealing with stress. They tend to avoid social and political events. To counter these tendencies, Carmon advises the developing of interpersonal skills.

Due to the computer centre director's untenable political position, Carmon suggested that his best resources are 'craftiness' and insight. Since his position is unique - neither staff nor users nor administration being in a position to wholly assess him - the director is left in the position of being the only person qualified to evaluate himself. To this end, and to define his direction, he can write his own job description, a pleasure (or duty?) not assigned to most of us.

*Terry Farley*

# TELIDON

*Robert Bazer, Department of Communications, Ottawa*

Canadian industry has cooperatively developed what is rapidly becoming a world-standard version of videotext - TELIDON. Unlike teletext, videotext systems permit two-way interaction.

Canadian leadership in the field has evolved for several reasons. In the early 70s it was acknowledged that the development of computers and communications systems should be integrated. Design principles for videotext were established, incorporating the view that such a system must be designed as far as possible independently of the technologies currently available, and that the computing ability of the terminals in a videotext network should be maximized.

This approach resulted in the development of an 'alpha-geometric' coding scheme which requires only seven basic 'picture description instructions' or PDIs to create primitive geometric forms. The PDIs, along with coordinate and color information, permit the construction of objects on the screen. ASCII text can be overlaid on the screen on a 20 x 40 character matrix. Replication of objects, scaling and rotation are possible.

Access to data is accomplished by moving through a tree-structure of menus. A keypad facilitates walking through the tree in any direction. An 'action page' menu enables the selection of mail, news or shopping facilities.

TELIDON is well suited for use with narrow band communication lines, specifically current telephone circuitry. This, combined with microcomputer terminal capabilities, provides TELIDON with the forward/backward compatibility demanded by the fast change and growth of the electronics industry.

**Future Development Possibilities**

- Currently eight colours and eight shades of grey can be selected. Colour lookup tables are being developed which will enable 4096 colour possibilities.
- Downloading of programs to the micro (in metacode) will be required, as will the capacity to fetch program modules.
- primitive animation effects
- terminal to terminal communications
- text editing
- store and forward message traffic
- simultaneous retrieval
- 'common visual space sharing' to make simultaneous image modification possible

Database development is currently being carried out. Work is being done to set up direct input from information suppliers, and to enable the host system to access other timesharing systems.

A resolution-independent coding scheme which will merge digital technology compatibly into the current system is being developed as are keyword search techniques.

Various types of transmission facilities are being tried. In addition to telephone lines, fibre optics and satellite are used, as is TV's vertical blanking interval. Five telephone companies are involved.

The Canadian government has played a leadership role in TELIDON development. In April 1979 a four-year TELIDON development program was initiated. This program supports field trials of equipment. Initiative is picked up by private industry. In 1980, additional funds were provided for eight more trials. As a result of the Canadian start in this field, the CCITT (the UN sanctioned telecommunications union) has documented the Canadian standard. This places the Canadian system on an equal

continued...

**TELIDON** continued

footing with that of both the French and British.

It is projected that the Canadian standard will eventually prevail, placing Canadian manufacturers in an enviable position. Although the US does not strictly adhere to CCITT standards, at a 1500-delegate conference held recently in Toronto, an AT&T spokesman announced that the AT&T standard would be principally based on that of TELIDON. Furthermore, a recommendation, ten months ago, that the CBC adopt the French videotext standard has been withdrawn in favor of the Canadian version.

While enthusiastically pursuing its lead in this field, the Canadian government, along with the many private companies involved, does not seem to be spending time in consideration of the social and political impact such systems will have. And the question of what kind of information will comprise the massive database which is expected to develop was not answered - neither was the question of whether or not people really want it.

*Terry Farley*

# MICROELECTRONICS, COMPUTERS AND THE ARTIST

*Richard H. Hill, Chairman, Photo/Electric Arts Dept., Ontario College of Art*

Richard Hill proposed that our idea of art is still constrained by the definition of fine art that has dominated the past 500 years: art is painting and sculpture, in traditional media.

However, during the Renaissance, the creation of art was an experimental process. Perspective was rediscovered. Leonardo da Vinci utilized the most advanced technology of his day. For example, *The Last Supper* was as much an experiment in developing a durable painting medium as it was an attempt to create visual art. Artists like Leonardo were innovators - if they lived and worked in our era, they would likely be investigating the creative possibilities of microcomputers.

The advent of photography forced a redefinition of art in the last century. With computers, art continues to move away from the definition, as well as 'object' and 'commodity' status, acquired over the past five hundred years.

Since the 1960s a disintegration of the traditional role and perception of the artist has gathered momentum. Artists have effected this breakdown by producing works of art which cannot fall into the traditional fine art frame of reference. Landscaped earthworks are a familiar example.

During the 1960s, computer graphics, animation and music became new frontiers for exploration. But at that time, the programmer, no matter how well-meaning, stood in the way. Recent mass marketing of microcomputers and the increasing incorporation of microcomputer technology into our lives, have made computers a viable, direct medium for artists. Creativity and innovation, using computers, is now manifest.

As a result of the incorporation of modern technology into creative pursuits, the artist redefines himself, as did the experimenter of the Renaissance.

*Terry Farley*

# THE EVOLUTION OF A REORGANIZATION

# OF COMPUTING SERVICES

# AT STANFORD UNIVERSITY

*Carolyn Autrey-Hunley, Center for Information Technology, Stanford University*

The computer centre at Stanford has recently adopted an organizational structure which departs considerably from that of the traditional university computer centre.

The re-thinking of the centre's structure was prompted by the proliferation of computing empires on campus. A task force was set up to create an organizational structure which would allow the centre to continue to be effective in this environment. As a result of a two-year investigation, the traditional breakdown - Systems, Operations, User Services, etc. - has been discarded.

The new structure was named the Center for Information Technology (CIT). The director of CIT became responsible to three of the five university vice presidents, namely the Vice President of Medical Affairs, the Vice President of Business and Finance and the Vice President and Provost.

The old departments were replaced by six new ones:

- Instruction and Research
- Administrative Information Systems
- Financial Analysis and Systems Measurement
- Administrative Services
- Computing Systems and Services
- Planning and Program Development.

After nine months of operation in this mode, Ms Autrey-Hunley reported success, in spite of anticipated difficulties. Users in particular feel that they are being better served. Though budgeting issues have yet to be properly resolved, it is anticipated that sub-department budget allocation will become less restrictive. Personnel have also tended to become more mobile within the new sub-department structure.

A copy of the report *The Task Force on the Future of Computing at Stanford* will soon be available in the Information Office.

*Terry Farley*

# LEGAL ISSUES OF COMPUTER ABUSE

*Dan Mersich, Attorney at Law*

Mr. Mersich, developing his career around computer issues, has acquired expertise in the area of computers and law. His discussion encompassed types of abuse, laws as they apply to 'intellectual' property and the issue of privacy.

**Abuse**

Computer abuse takes several forms. The potential for abuse in cases of unauthorized access is usually proportional to the degree of sensitivity or confidentiality of the data kept on the system. There is also the issue

continued...

**LEGAL ISSUES** continued

of 'stealing' a portion of the computational capacity of a computer - the theft of 'computer cycles.' The majority of security breaches turn out to be student pranks where gaining unauthorized access to a computer is an end in itself.

As yet no laws have evolved to deal specifically with computer - related infractions, although certain laws currently in place work *reasonably* well. Theft of online data or software provides a unique situation - the object stolen remains in the possession of the victim! In addition, Canada's Criminal Code requires that something stolen be a 'thing', something concrete. Data and computer cycles have yet to become 'things' in the eye of the law, and they are unlikely to become so. Trespass laws require a person's unauthorized presence on private property. Unauthorized computer access over communication lines does not qualify as trespassing. As various cases go to court, however, precedents and guidelines will be set.

### Patent and Copyright Laws

The victim of a software theft, on any medium, will find patent laws useless. Software is not a 'thing' either, and patent laws protect 'things' only. However, *copyright* laws don't require the creation being protected to be a 'thing'. Copyright laws protect the written word. Therefore, they are useful only if you prove that your stolen software was an original 'literary' work. It is clearly not a violation of copyright if someone 'steals' electronic impulses which are software to their owner.

### Trade Secrecy Act

The Trade Secrecy Act probably provides the best protection. However, it must be demonstrated to the court, if necessary, that the software is a genuine trade secret and has not been previously disclosed. This is a problem in the US where at least part of the software source code must be disclosed in the process of registration.

Canadian trade secret laws simply require the registration of the program's name and the date of its completion. This has resulted in Canada becoming a copyright haven since the threat of potential cosmetic alterations to code is not a limitation. A program's algorithm, like a plot in a novel, is not protected - though this is as yet untested.

### Privacy

The other major legal issue concerns matters of privacy. This too is an area where solutions are not yet specific. However, laws currently being implemented seem to suggest that we do have a right to privacy. Seven statutes on privacy are in various stages of completion in the US. In Ontario, the law says that the owner of a 'leaky' databank can be sued. Mersich believes a self-regulating system will evolve with regard to invasions of privacy since a great deal of private information kept in databanks is of little interest to people performing searches on those files. He cited the situation of irrelevant personal information being released to a loan officer during the course of a loan transaction. Here, the loan officer evaluates the likelihood of an applicant's adherence to the loan agreement. Non-relevant information released to him will likely be disregarded.

Precedents have already been set in instances of personal data requests by an outside party. In the American case of Glover vs Glover, a divorcee's ex-husband took illegal custody of her son. She requested court orders to demand that the Internal Revenue Service release the ex-husband's address and that the phone company release his phone number. Her request was denied.

It is unlikely that laws to deal effectively with *all* possible issues can be prescribed. In any case, there are dangers inherent in attempts to restrict the availability of data through legislation. Mersich expressed the view that the degree of computer abuse is not out of proportion to the degree of computer use. To place the issue in perspective requires a cost/benefit analysis - the benefits of computers must be weighed against the cost in terms of infringement on privacy.

*Terry Farley*

# OFFICE AUTOMATION AND THE COMPUTER or RECOGNIZE THAT THE USER BELIEVES THAT IGNORANCE IS BLISS

*David W. Conrath, Centre for the Evaluation of Communication - Information Technologies, University of Waterloo*

The 'electronic office' and the 'office of the future' have become popular media buzz words, used to describe an (often hypothetical) office environment which utilizes the latest technological advances in the communications field. In the 'electronic office', pens, pencils and even typewriters are replaced by video terminals and computer tapes and disks replace the papers and filing cabinets of the conventional office.

Some of the major components of the electronic office environment are:

text processing
electronic mail
commercial transaction systems
electronic telephone
audio & video conferencing tools
planning and decision support systems
storage and retrieval

## Text Processing

In any office, typing, editing and reproducing text is a continuous and time-consuming process. Editing often necessitates retyping several pages and often introduces new errors. Today's sophisticated text processing systems eliminate much of this retyping and make it possible to input, modify, store and communicate text and graphics electronically.

## Electronic Mail

With electronic mail sytems, staff members can prepare messages and then 'mail' them electronically to another staff member or several staff members simultaneously at several different locations. Electronic mail is not delayed by rain, sleet, snow or postal strikes and the addressee does not have to worry about missing a call. The message recipient can retrieve his message at his own convenience.

## Commercial Transaction Systems

Computers have been used to organize and simplify commercial transactions for some time. Credit cards and computerized banking systems have prepared us for the possibility of a cashless society. Recent developments such as TELIDON and other videotext systems which provide for two-way interaction have made new services such as shopping via home television a possibility.

## Electronic Telephone

The electronic telephone can be programmed to forward calls to another number and provide other complex call transfer options. The electronic switchboard can be used to screen calls, allowing priority calls (such as a call from your boss) to interrupt an existing connection. The

continued...

**IGNORANCE IS BLISS** continued

'private conversation' may soon become a thing of the past.

**Audio & Video Conferencing Tools**

One can attend a conference by sitting in front of a video screen, seeing and hearing each person when he talks. One can draw on a screen with Scribble phone, or share a common workspace - the electronic blackboard - which allows simultaneous input from more than one user to appear on every screen connected to the system.

**Decision Support Systems**

The 'electronic office' will be more readily accepted if it can be used easily by non-programmers. Furthermore, it should be geared to the needs of management, as well as clerks and secretaries. People must overcome the 'keyboard equals secretary' syndrome. One advanced management use is multi-point budgeting which immediately shows the system-wide ramifications of a proposed budget change.

**Storage and Retrieval**

Information will be stored by optical character recognition, computer terminal entry or, in the future, by voice. Problems will be created in retrieval: finding the needle in the haystack. The most important element will be the electronic wastebasket, to get rid of information that is no longer needed.

*Michael Boshes*

# UNIONIZING THE COMPUTER CENTRE:

## PROSPECTS AND PROBLEMS

*John B. Kervin, Acting Director, Centre for Industrial Relations, University of Toronto.*

John B. Kervin described (1) the contributing reasons for computer centre unionization, (2) the process of unionization and (3) the ensuing results. He pointed out that most unionization comes about not for monetary reasons but to give workers more control over their work environment. Factors contributing to the process usually involve unfair treatment by supervisors, unfair layoff policies, declining job status and security and rules and changes applied without individual consideration.

He pointed out that social factors far outweight monetary ones in deciding the question of unionization. The fact that the worker's parents and peers belong to unions often greatly affects his attitudes to unionization. Social attitudes often lead the worker into a conflict of loyalties: he identifies with management in terms of promotion and with the union in regard to maintaining the status quo in the work environment.

Unionization usually progresses through a definite pattern of organizational activities. At first, an individual quietly gripes about perceived injustices; secondly, a small group begins to complain among themselves. Next, some specific issue presents itself to form a focal point for more general complaint and, finally, a natural leader emerges to contact the union.

After unionization, several results usually occur. Labour costs generally rise 10% to 15%, forcing management to look at efficiency and productivity. The work rules usually become more regulated with respect to seniority, hours, etc. Since there is now a formal method to voice complaints, employee turnover usually decreases although layoffs become more frequent since the union has replaced the more paternalistic atti-

continued...

**UNIONIZING** continued

tude of management with a more rigid and less personalized set of rules governing layoffs. Finally, the overall quality of the workers the company hires tends to increase since the employer wishes to get more quality for the extra salary he must pay.

The talk was concluded with a discussion of what happens when a computer centre strikes. In general the computer centre continues to operate due to teleprocessing activities and supervisory help. Users who cannot do their computing usually go elsewhere. Apparently, because of the people who are usually drawn to work in a university computer centre environment, most shops should prepare for a long strike.

*John Mavity*

# ACF2 IMPLEMENTATION

### Introduction

In the Dec. 80/Jan. 81 edition of *COMPUTERNEWS* an article described the planned access control system for the UTCS IBM computers. This program, ACF2, is near implementation.

Reviewing briefly, ACF2, or **Access Control Facility,** is a system to aid in the establishment of a secure environment for IBM users. It provides a more sophisticated method of identifying users, enables users to control access to their data and simplifies some internal accounting procedures.

The target date for implementation of ACF2 is September 1981. At that time the accounting office will issue all new users with seven character ACF2 *logon identifiers* (LIDs) rather than the four-digit *service access code* (SAC) numbers. These LIDs will apply to all academic batch and timesharing services including WYLBUR, TSO, GPJS and ATMS. Three months from the date of implementation, UTCS will declare a deadline for the conversion of existing SACs to LIDs. Users who currently have SACs, and who wish to continue using them, will be allowed to do so without change to their access methods or datasets during the interim period only - i.e., before the announced deadline. WYLBUR, TSO, GPJS and ATMS will issue a message to such users indicating the LID which has been assigned to them and which is valid for the same services that they access with their SACs.

### Datasets under ACF2

The introduction of ACF2 entails substantial modifications in the handling of datasets, with simplifications occurring in some areas. For example, because datasets will no longer require registration, JCL will work exactly as described in the IBM manual. In addition, jobs submitted from WYLBUR or TSO sessions will not require accounting information if charged under the LID of the WYLBUR or TSO user.

- **Dataset Names**

  With the implementation of ACF2, the dataset high level prefixes "USER", "SHRAE", "Unnnnn" and "TSnnnnn" will be phased out. In their place, users of the system will use their LIDs as prefixes. This provides two benefits. First, it ensures that dataset names are unique, thus eliminating the need for putting one's initials in the dataset name. Second, it makes the task of discovering who owns a particular dataset fairly straightforward. Other advantages include: (1) the ability to use "SHOW CATLG" on WYLBUR or "LISTC" on TSO to list all of one's datasets, (2) the ability to access all one's datasets through WYLBUR, even though they were created with TSO, and (3) the ability to archive datasets by catalog level.

continued...

ACF2 IMPLEMENTATION continued

The WYLBUR and TSO commands "REG" and "SCRATCH", and the GPJS procedures "ALLOC", "CONVERT" and "SCRATCH" will become unnecessary with ACF2. *The effect of this is that every dataset created with a LID prefix and a disposition of "CATLG" will be retained by the system and charged to that LID.* Thus, when datasets are created using the LID as the high level prefix, it is *not* necessary to use the registration process to ensure their permanence.

- **Dataset Access**

The main change in dataset handling with ACF2 is that of security. Datasets created with a LID as a high level prefix will have a default protection, alterable by the user. While it may be changed to any level the user desires, all accounts will be set up with a default level of **full protection.** In other words, no access to data of any sort, for the purposes of reading, writing, altering, creating or deleting datasets - or for the execution of any WYLBUR exec file, TSO clist or load module - will be permitted for anyone other than the owner of the LID. This security feature makes the service similar to that on the DEC-10 and APL.

- **Access Control**

ACF2 allows users to control access to their datasets by means of *rules* which they specify - rules which are compiled into an internal ACF2 table. Such rules relate to datasets or any other resources that the user owns, and specify who may *read, write, execute* or *delete* the data. Both the dataset name and the person(s) given access may include wild card symbols to facilitate specification. It is possible, for example, to limit access to a dataset to only those LIDs owned by a particular *customer account* (CAN).

The access rule compiler is available through TSO commands and GPJS procedures. WYLBUR users will be able to EXEC a facility to do this for them. In addition to supplying the vendor-distributed interfaces, UTCS is developing tools to make certain changes such as establishment of default protection for datasets.

Once these changes are made, they will come into effect immediately for anyone subsequently signing on or accessing the affected LID's data for the first time. This aspect, instituted for system performance reasons, may incur a delay in the security change for someone who is currently logged on to the system and has accessed the data in question. If that person logs on again, he will be subject to the updated rules.

The ACF2 rule system has some similarities to other services at UTCS. It is most similar to the DEC-1090's use of ACCESS.USR but differs in that (1) the rule set must be compiled to work, (2) there is no additional PROTECT command or similar scheme and (3) the rules, when compiled, will automatically be rearranged so that specific rules are not 'hidden' by general ones. The four access controls, *read, write, allocate* and *execute,* are analogous to the protection settings on the DEC-1090, VAX and UNIX systems. APL has similar but expanded data control (read, write, allocate) but handles execute protection in a different manner.

As with the DEC-1090, a user may specify that all accesses to a particular dataset or group of datasets by a particular person or group of people be logged by the system. UTCS is developing tools to aid the user monitor the list of people accessing his own datasets.

**Selected Features of the System**

Some improvements to the UTCS system accompany the ACF2 package. With it any user can change his password at any time. This will be accomplished by entering the old password, followed by a slash ("/"), followed by the new password wherever the

continued...

**ACF2 IMPLEMENTATION** continued

old password may occur. Thus, during WYLBUR, TSO or ATMS signon or on a /*PASSWORD card, the old/new password may be specified.

Also to come is a command which allows the user to review and update various parameters of his account such as default routing codes and forms, automatic job banners and job names. The user will be able to see his current balance, his privileges and his accessibility to the variety of services at UTCS through this command.

### Program Examples

The two examples on the insert were taken from the OS *PL/I Optimizing Compiler: Programmer's Guide,* page 12. These examples will run on our system, virtually unchanged, if submitted from WYLBUR or TSO after September. The user should change all occurrences of the item "HPU8" in both jobs to the user's LID, and replace the value of the SER subparameter on the first job with a valid UTCS user disk serial.

Points to note are:

1. The job card does not need our accounting field since the job is being submitted from an online IBM system.
2. The user who wishes to fetch his job output to his terminal, reroute it or purge it should make the job name ("OPT3#3" and "OPT3#4") start with his LID. WYLBUR and TSO users may have this statement built for them during the submit process.
3. The file created, "<LID>.ROOTS", will be retained by the system after the first job since "DISP=(NEW,CATLG)" was specified, and the dataset starts with the LID.
4. When the second job has run, the dataset "<LID>.ROOTS" will no longer exist, as "DISP=(OLD,DELETE)" was coded.
5. If the dataset created or deleted does not start with the LID under which the job has been charged, the job's LID must be given *allocate* privileges for that dataset by the LID which owns it.
6. If the jobs are to be run in batch mode (GPJS), accounting information should be provided via /*LOGONID and /*PASSWORD statements.

### ACF2 Documentation

A variety of documentation changes will occur with the ACF2 installation. A number of online help files on the IBM and DEC-1090 systems will be altered to reflect new procedures or commands. Alterations will also be made to user and reference manuals, both online and offline, reference cards, accounting forms, signs, error messages and USERBOOK. These changes are currently under way to prepare for the projected target date of September.

Some new material will be generated as well. A conversion document on ACF2 for current users will be distributed to USERBOOK subscribers. Current account holders will receive a descriptive flyer on the system which will delineate its impact on the user. New accounts will be issued accompanied by a document explaining use of the new facilities. When installation time nears, HOTNEWS and signon messages will carry bulletins concerning the change.

continued...

## ACF2 IMPLEMENTATION continued

```
//OPT3#3 JOB H205434-TSOC,HPU8,NOTIFY=HPU8
//STEP1       EXEC PLIXCLG
//PLI.SYSIN  DD  *
 CREATE: PROC OPTIONS(MAIN);
         DCL PUNCH FILE STREAM OUTPUT,
             DISK FILE RECORD OUTPUT SEQUENTIAL,
             1 RECORD, 2(A,B,C,X1,X2) FLOAT DEC(6) COMPLEX;
         ON ENDFILE(SYSIN) GO TO FINISH;
         OPEN FILE(PUNCH), FILE(DISK);
 NEXT:   GET FILE(SYSIN) LIST(A,B,C);
         X1=(-B+SQRT(B**2-4*A*C))/(2*A);
         X2=(-B-SQRT(B**2-4*A*C))/(2*A);
         PUT FILE(PUNCH) EDIT(RECORD) (C(E(16,9)));
         WRITE FILE(DISK) FROM(RECORD);
         GO TO NEXT;
 FINISH: CLOSE FILE(PUNCH), FILE(DISK);
         END CREATE;
/*
//GO.PUNCH DD SYSOUT=B,DCB=BLKSIZE=80
//GO.DISK  DD DSN=HPU8.ROOTS,UNIT=3330-1,VOL=SER=HB0037,
//            SPACE=(TRK,(1,1)),DCB=(RECFM=FB,BLKSIZE=400,LRECL=40),
//            DISP=(NEW,CATLG)
//GO.SYSIN DD *
5 12 4
4 -10 4
5 16 2
4 -12 10
5 12 9
29 -20 4
/*
```

Figure 3-4.  Creating a CONSECUTIVE data set

```
//OPT3#4 JOB H205434-TSOC,HPU8,NOTIFY=HPU8
//STEP1       EXEC PLIXCLG
//PLI.SYSIN  DD  *
 ACCESS: PROC OPTIONS(MAIN);
         DCL RESULTS FILE RECORD INPUT SEQUENTIAL,
             1 RECORD, 2(A,B,C,X1,X2) FLOAT DEC(6) COMPLEX;
         ON ENDFILE(RESULTS) GO TO FINISH;
         PUT FILE(SYSPRINT) EDIT('A','B','C','X1','X2')
           (X(7),3(A,X(23)),A,X(22),A);
         OPEN FILE(RESULTS);
 NEXT:   READ FILE(RESULTS) INTO(RECORD);
         PUT FILE(SYSPRINT) SKIP EDIT(RECORD) (C(F(12,2)));
         GO TO NEXT;
 FINISH: CLOSE FILE(RESULTS);
         END ACCESS;
/*
//GO.RESULTS DD DSN=HPU8.ROOTS,DISP=(OLD,DELETE)
```

Figure 3-5.  Accessing a CONSECUTIVE data set

## ACF2 IMPLEMENTATION continued

### The Project

The ACF2 implementation project is a very important effort currently being undertaken by the UTCS IBM Systems Group. Nearly all the members of this group are and have been involved for months due to the size and complexity of ACF2 and the large number of changes required to the system.

As project leader, I supervise several 'sub-projects.' The upgrade to the dataset monitor, which currently handles the registration process, is co-ordinated by Danielle McKenzie. Peter Young is responsible for the accounting system changes. In charge of the accounting office support is Henri Arnaud while David Gamey is responsible for WYLBUR and JES2 modifications. Outside of the systems group, others who provided valuable assistance included Mike Boshes, Chris Warchol, Sue Mai Chong and Marg Doherty.

*Barry Lay*

# UPDATE: UTCS TEXT PROCESSING

UTCS wishes to affirm that in the coming academic year there will be continuing support of all currently available Text Processing facilities.

The university presently has a committee under the chairmanship of Professor Eva Swenson, University Co-ordinator of Information Systems, to examine the short to medium term needs for Text Processing at U of T. Until a report of this committee has been submitted to the Vice-President - and any decisions or recommendations have been carefully considered - no plans to change any currently available UTCS Text Processing facilities have been, or will be, made.

In summary, UTCS will maintain its mainframe environments, based principally on ATMS, SCRIPT (Waterloo Script), SOS/RUNOFF and UNIX, at their present levels. Any changes or enhancements to these environments will be based on the recommendation of the above committee.

UTCS continues to seek methods for improving services and welcomes suggestions or criticisms to that end. Those who wish to express views or opinions to Professor Swenson's committee are encouraged to contact her directly to ensure that these concerns are properly represented.

*Dr. Frank Spitzer*

# STATISTICAL PRODUCTS

This article focuses on the newly revised and updated section of USERBOOK on statistical products.

Traditionally, computing facilities and products available to users have reflected a strong dependance upon the actual hardware that was used. Similarly, documentation was written and organized with close ties to the model, operating system and architecture of the machine. Recently however, trends in software and hardware technology have been encouraging machine independance and transportability of products. Accordingly, in 1980, UTCS adopted a Product Line approach to service support. In order to better reflect this product orientation, we are reorganizing our user reference documentation. Increasingly, documentation will be organized by product rather than by machine. *3.7STATISTICS PRODUCTS* is the prototype for our documentation scheme and replaces the USERBOOK modules 3.7BMD/BMDP, 3.7CENSUS71, 3.7DATATEXT, 3.7SAS, 3.7SPSS, 3.7STATNDEX and 3.7STATOTHER as well as the statistical material contained in the USERBOOK chapter 3.7.

*3.7STATISTICS PRODUCTS* is divided into three main sections: *Product List, Function List* and *Product Abstracts.* The *Product List* is an alphabetical list of all the statistical program-products offered at UTCS. The list also notes the UTCS support level and computing environments which can be used to access the various products. The *Function List* is an alphabetical listing of mathematical, statistical and experimental functions with a cross-reference to the statistical computing product which UTCS recommends be used to perform the various functions. *Product Abstracts* consist of brief descriptions of each statistical product and are arranged alphabetically. Included here are a brief overview and summaries of the strengths and weaknesses of each product. There are also pre- and co- requisites listed and a list of products to which the product can be easily linked such that the output of one product can become the input for another or vice-versa. Other sources of product information are included as well as a brief discussion of how to use the product at UTCS.

For example, a user has a small dataset and wishes to run a multiple linear regression. Depending on other considerations (intercept/no intercept, weighted, stepwise, plot of residuals) he can choose from BMDP, SAS and SPSS by looking at the *Function List.* However, if he uses an HSJS account, the *Product List* points out that he can only use SPSS. Thus, a decision on the choice of product is made without the hassle of consulting all the user manuals (after finding them), of asking what systems each is available on and of learning how they are used at UTCS. This should save time and trouble for users and will encourage them to take advantage of and use the most appropriate statistical product available.

We hope that this product line approach to user documentation will better meet documentation needs and that users will find *3.7STATISTICS PRODUCTS* to be accurate, comprehensible and easy-to-use.

*Janet Barr*
*Diane Mitchell*

# NEW DEVELOPMENTS - UTCS SHARP APL

Over the next few months there will be two major changes in the APL system:

1) UTCS will be installing a new release of APL to bring us up-to-date with IP Sharp.

2) The N- and B-tasks, available on the Sharp system, will become available to UTCS APL users.

The new APL release brings a number of improvements and extensions to the APL language. The nature and impact of these changes will be outlined in a new public library workspace, 1 NEWRELEASE. The implementation date will be announced in an APL HOTNEWS item.

In Sharp APL, a task is any actively computing session. Until now, UTCS APL users have only had available the Terminal or T-tasks which must have a terminal associated with them and which are run interactively. The new N- and B-tasks allow submission of APL tasks to be executed, independent of the interactive terminal.

Briefly, an N-task is a non-terminal task, initiated by a T-task and executed immediately, independent of its parent T-task. A B-task or Batch task is similar to a N-task, but does not execute immediately. It is submitted to be scheduled by the B-task scheduler, usually with some user-supplied specifications about when the task should be executed.

N- and B-tasks should be useful in applications where output and input is to and from files, so that terminal interaction is not required.

There are attractive advantages to N- and B-tasks for these applications:

- The task is less likely to be abnormally terminated. The risk of termination due to terminal static or disconnect is eliminated.
- There is no need to tie up an interactive terminal for the duration of the task.
- N-tasks will be less expensive to run - there will be no connect charge.

The new N- and B-tasks are described in detail in the *SHARP APL Reference Manual* by Paul Berry and in the *SHARP APL Technical Notes* 4 and 5, obtainable through the Information Office (978-4990).

Users should note that there are differences in N- and B-tasks as run on the SHARP APL system and as implemented at UTCS.

Exact information regarding these differences and also scheduling and accounting will soon be placed in the APL HOTNEWS workspace, 1 HOTNEWS.

N-tasks were implemented at UTCS on July 1, 1981. The implementation of B-tasks will occur after the installation of the new APL release scheduled for September.

B-tasks are not going in immediately because our version is strictly experimental. The version coming with the new release is the official, supported production version. It is more powerful and easier to use. Exact implementation dates will be announced by the APL signon message.

*MaryAnn Lawry*

# DUAL1 - A TEST VERSION

DUAL1 is a program used in the analysis of categorical data such as

- contingency/frequency tables
- multiple choice data
- paired comparison data
- rank order data
- successive categories data

Developed by Professor S. Nishisato, DUAL1 is available to UTCS users on a trial basis, with Class C support.

It utilizes dual scaling methods described in the following publication:

*Nishisato, S. Analysis of Categorical Data: Dual Scaling and Its Applications (Mathematical Expositions No. 24)* University of Toronto Press, 1981.

A copy of this book is available at U of T Bookroom.

In essence, dual scaling is a group of techniques intended primarily, but not exclusively, for analysis of categorical data. It quantifies data in a two-way classification table so as to maximize simultaneously the between-row and the between-columns sum of squares, relative to the total sum of squares. In addition to its property of duality it has other interesting characteristics:

- It does not employ any assumptions about the distribution of responses.
- It explains the joint responses in the data matrix only in terms of weights (scores) assigned to the marginals and hence offers a data-reduction technique for categorical data.
- It is a method for constructing an 'optimal' composite of several categorical variables.
- It can determine the weights for categorical variables so as to discriminate maximally among several groups of subjects. As such it provides discriminant function analysis of categorical variables.
- It maximizes the generalized Kuder-Richardson reliability of multiple choice data.
- It provides a simple but effective means of item selection in test construction.
- It makes effective use of item-difficulty levels in arriving at test scores for individual subjects.
- It can capture partial knowledge that subjects might have of the topics in multiple choice testing, through differential weighting of response options.
- In applications to other statistical models, it can quantify categorical data to suite analyses such as factor analysis and the analysis of variance.
- It provides multi-dimensional analysis as warranted by the data, thus without jeopardizing the validity of quantification. Many scaling techniques, in contrast, are valid only under the assumption of a uni-dimensional distribution of the 'attribute' under investigation.
- As applied to general scaling problems, it takes into consideration individual differences in judgment and this is capable of isolating homogeneous subgroups of subjects in terms of their distinct sets of response patterns. This approach of individual differences scaling also suggests that dual scaling determines scale values of objects so as to maximize the reproducability of responses of individual subjects in terms of the scale values.

It was suggested by S. Nishisato that the DUAL1 program will prove useful as a learning device to implement scaling methodology to many practical problems. For production runs a larger-scale program, OPSCALE, will be available in early September.

**DUAL1 - A TEST VERSION** continued

The following JCL is required to access this program through GPJS:

```
//    nnnn,aaaa),'name',CLASS=A
// EXEC  DUAL1
//SYSIN DD *
            .
            .
            .
            DATA CARDS (Format described in
              the book)
            .
            .
            .
/*
```

If you have any problems accessing this program or questions on data setup, call William Barek at 978-6509 or -8823.

*William Barek*

# IPRINT TO REPLACE IBMLST

IBMLST, the utility which prints DECsystem-10 files on any of the IBM systems' printers, will be removed from the system in the near future. There are three reasons for this change:

- Certain enhancements in the online accounting system require it.
- IBMLST is difficult to maintain.
- IBMLST has been fully superceded by IPRINT.

IPRINT incorporates all the functionality of IBMLST and contains many useful new features as well. In addition, IPRINT is about 40% faster than its predecessor. For these reasons most users chose long ago to make the easy conversion to IPRINT.

UTCS is identifying users who still utilize IBMLST and is contacting them directly. Very few will have any difficulty converting. The documentation (see the IPRINT help file and DOC:IPRINT.DOC) is easy to understand and implement.

For those who require it, UTCS will provide any necessary assistance. This may involve explaining the command syntax or helping the user convert old MIC files. Anyone wishing to obtain UTCS help in this matter should contact the time-sharing advisor at 978-6465 or a CSR.

*Dr. Edmund West*

## DECUS CANADA SYMPOSIUM RETURNS TO TORONTO

Toronto will host the 1982 DECUS Canada Symposium. DECUS (Digital Equipment Corporation User Society) exists to serve the needs of the users of DEC computers such as DECsystem-10, DECsystem-20, VAX and various types of PDP-11s. Its regular symposia give users the opportunity to communicate directly with Digital and with users who share common interests and problems.

Planning for the the conference began last February and is already well advanced. In many ways it will be a reprise of the well received 1980 Symposium. Once again the symposium will be held at the Harbour Castle Hilton Hotel. The February dates for the conference (February 9-12, 1982) are similar. And about half of the 1982 Planning Committee are seasoned veterans of the 1980 Committee.

UTCS is well represented on the Planning Committee. Dr. Edmund West is chairman. Also participating are Corot Reason, Robert Lawson, Ian Darwin and Sue Chong.

Following the tradition of recent DECUS Canada symposia the first day of the conference will be devoted to a series of formal seminars. This will give attendees a chance to study a particular topic in much greater depth than is possible in the short sessions of the regular symposium.

The Symposium itself will be three days of interesting exhibits, presentations, discussions and meetings. The traditional, technically-oriented interest streams will be augmented by many sessions of interest to managers and non-specialists.

Time and space will again be made available to user groups with a common interest. Many attendees have taken advantage of this opportunity in the past. For example, during the 1980 conference at least two new local user group organizations were formed.

There will also be a wide selection of other activities available, such as an extensive spouses' program. And the traditional banquet will be one of the conference's highlights.

It's not too early to begin thinking about attending the conference. If you would like to receive additional conference information, or if you are interested in helping either before or during the conference, write to:

Anne Betz
DECUS Canada
P. O. Box 13000
Kanata, Ontario
Canada K2K 2A6.

*Dr. Edmund West*

## REPORT ON THE SPRING '81 DECUS

The May 18-21 DECUS symposium in Miami Beach was particularly rich in technical material, due mainly to well-prepared presentations by Mike Uhler, an operating system developer. I shall not burden the reader with technical aspects of the meeting, however. There was a lot of non-technical information that I shall outline here.

The new software package that will upgrade our 2780/3780 link with the Academic 3033 to a HASP multileaving link is far behind schedule. The earliest, tentative release date is 10 months from now. This new package is tied to the release of GALAXY 4.1, the operating system's batch and spooler subsystem.

continued...

**SPRING DECUS** continued

This release of GALAXY will include a user-accessible library of routines that incorporates

- a memory manager
- a file manager
- an IPCF processor
- a TOPS-20 style (recognition input) command parser
- other facilities

GALAXY 4.0 has been released at TOPS-20 sites. All except the IBM-related software seems to be in fairly good shape. The -20 sites with the new IBM software are disappointed in the new product, effecting a slowdown of the release at -10 sites.

After release to us, UTCS will modify the IBM software to support our present control-X facility. In addition, the new software has some inherent security problems to be dealt with, prior to use in production at UTCS. In short the news is not good.

On the brighter side, DEC announced maintenance releases of a few of the system programs. Scheduled for release this year are:

- ALGOL
- MACRO
- LINK
- PIP
- COMPIL
- CREF
- PFH
- BACKUP
- MAKLIB
- BASIC

This is the first release of PIP in over five years. DIRECT is also ancient but is NOT in the list. The re-release of DIRECT is tied to the new release of GALAXY. DIRECT can be used to get directories of tapes and the new GALAXY supports ANSI tape labels. FORTRAN is also not on the list of new releases. Version 6 is in field test and is doing badly. Version 7 (FORTRAN 77) is going to follow after the as yet unknown release date for FORTRAN version 6.

There were many speculations and rumours. DEC cannot make new product announcements at DECUS meetings because of US free trade laws. DEC people must be cautious when questioned directly about future hardware and software products. Despite this restriction they manage to hint about the likely course of events.

DEC implied that it is about to support TOPS-10 multiprocessing for more than 2 CPUs. There are actually a few 3-processor sites now. The operating system is designed to support up to six processors.

They also hinted that the new top end 36-bit processor is developing well. Rumour had it that this new machine will be put into field test in about a year. The machine will definitely run both TOPS-10 and TOPS-20. Rumours about the speed of this machine are very inconsistent. The slowest speed I heard mentioned was 4 times our KL processor, which would make the new machine operate somewhere between 3.2 and 4 mips. Another rumour suggested the machine would be considerably faster than that. Given the state of the technology, its actual speed will probably be somewhere above (but not far from) the lower estimate. Still, a 6-processor TOPS-10 machine at 4 mips per processor is a whale of a machine.

Rumour mongers who had an eye on marketing strategy said that the announcement of a multiprocessing version of VAX/VMS was being delayed until the announcement of the new 36-bit machine. The reason for this is a two or more processor VAX/VMS system would be more attractive in terms of price/performance than any configuration of existing 36-bit systems.

One problem with a multiprocessor operating system is that it can handle many jobs, perhaps 300 to 400. Each job makes the size of the operating system itself a bit larger. Right now TOPS-10 systems cannot run more than about 175 jobs because the

continued...

**SPRING DECUS** continued

operating system runs out of address space (18 bits). The KL processor actually supports 30-bit addresses. Future TOPS-10 systems will have larger addressability. Unfortunately this larger capacity will be available only to the monitor. Users who are out of address space will have to wait even longer for relief.

The RP-20 disk (967MB formatted) is now supported by TOPS-10 and is being installed in the field. This large disk requires a lot of time for backups. In fact, some sites have bought two of them, one for production and the other for backups. The sites that have done this claim that this arrangement is less expensive than buying very fast tape drives to do backups. There is also a large saving of time in the disk to disk backup. DEC has recently announced another disk - the RP07 - which will also be supported by TOPS-10 in the future. The RP07 has a capacity of 516MB (formatted) which is about 3 times the size of each of our RP06 drives.

One session dealt with DEC's networking software 'DECnet.' DEC has a large network within the company that links 48 10s, 8 20s, 2 780s, 150 11s, 1500 word processors and also 15,000 terminals. The top level of DECnet (phase 3) is running on our VAX now but the release of that product for the -10 is about 10 months off. When and if the product is installed, terminals connected to either the VAX or the -10 will be able to log on to the other machine. Also, DECnet allows file transfers between machines. This would allow us to send mail to people on the VAX and them to reply back to people on the -10. This would require changing mail systems, however.

One of the sessions dealt with performance analysis and what to expect from system performance when a hardware change is made. The speaker had the results of an extensive series of benchmarks taken at different levels of hardware. The benchmarks showed that there is almost no substitute for more memory in trying to improve performance. The speaker was kind enough to send the benchmark results to us. We will be using this data to help predict the results of any hardware upgrade possible in the future.

In summary I think the symposium was rich in information that our site needs. It was a worthwhile venture.

*Corot Reason*

# COMPUTERS IN THE HUMANITIES

The Centre for Religious Studies will offer REL 1002Y, **The Use of the Computer in the Study of Texts,** in the academic year 1981-82. The course is intended as a general introduction to computing in the humanities. Members of the course will be introduced to the literature in this area and to the work in progress on campus. Further, they will learn to write programs of their own.

The text is Susan Hockey, *A Guide to Computer Applications in the Humanities* (Johns Hopkins, 1980) and the programming language to be used is SNOBOL4. It is not expected that members of the course will have previous computer training.

Topics to be covered include the representation of texts in machine-readable form; non-Roman alphabets; diacritical marks; text editing; input systems; output devices; preparation of indexes, concordances and dictionaries; morphological and syntactic analysis; style and authorship. In the second semester members of the course will be encouraged to develop their own particular research interests.

Auditors are welcome.

Instructor: Professor J.C. Hurd and guest lecturers. Tuesdays, from 2-4 pm; Trinity College, Room 24.

*J.C.Hurd*

# USER EXCHANGE COLUMN

**For Sale**

Student Record Services has a relatively new DATAMEX acoustic coupler (300 bps) to sell. Please call Dick Swenson at 978-6513.

**Expo '81, Reno, Nevada**

*Accounting and Information Systems Expo '81, November 12-14, 1981, at MGM Grand Hotel, Reno, Nevada,* co-sponsored by the Data Processing Management Ass'n, the Association for Systems Management, the Institute of Internal Auditors and the Nevada Society of Certified Public Accountants, the College of Business Administration and Continuing Education, University of Nevada-Reno. For further information, contact Leanne Stone, 702-784-4046.

# CIVIC HOLIDAY/SUMMER HOURS OF SERVICE

The following hours of service will be in effect during the Civic holiday.

| | **August 1 (Saturday)** | **August 2 (Sunday)** | **August 3 (Monday)** |
|---|---|---|---|
| Academic Services (GPJS, HSJS, TSO, WYLBUR) | 08:00-20:00 | 08:00-20:00 | Closed |
| APL/ATMS | 08:00-20:00* | 08:00-20:00* | Unattended |
| DEC 1090 | 08:00-20:00* | 08:00-20:00* | Unattended |

* Running unattended outside these hours

Normal hours of service for all systems will resume Tuesday, August 4, 1981.

Users are reminded that summer hours for eligible University of Toronto staff members commenced on Monday, June 29 and regular hours resume on Tuesday, September 8. During summer hours, UTCS offices close at 4:30 p.m. Monday to Friday.

See HOTNEWS for any changes.

# LABOUR DAY HOURS OF SERVICE

The following hours of service will be in effect during the Labour Day weekend.

| | **September 5 (Saturday)** | **September 6 (Sunday)** | **September 7 (Monday)** |
|---|---|---|---|
| Academic Services (GPJS, HSJS, TSO, WYLBUR) | 08:00-20:00 | 08:00-20:00 | Closed |
| APL/ATMS | 08:00-20:00* | 08:00-20:00* | Unattended |
| DEC 1090 | 08:00-20:00* | 08:00-20:00* | Unattended |

* Running unattended outside these hours.

Normal hours of service for all systems will resume Tuesday, September 8, 1981.

See HOTNEWS for any changes.

# UTCS CHANGE COMMITTEE

In the last issue of *COMPUTERNEWS* I promised to report regularly on the activities of UTCS' Change Committee. I can report that the Change Committee itself is about to change, in that Dr. Frank Spitzer will be taking over the chair in July.

There are 34 approved change requests as of the June 18 meeting. This is a summary, in no particular order, of change activities which I think are of interest:

- One change for dial-up users is that they will soon be dialing PACX and selecting their system, instead of dialing direct. See the previous issue of *COMPUTERNEWS* for details.
- Barry Lay, Systems Group, reports that ACF2 implementation work is on schedule. See the article on page 13.
- A CALCOMP 1051 colour drum plotter has been ordered.
- SAS has been updated to Version 79.5.
- IPRINT is about to make IBMLST a thing of the past. See page 21. Also, IPRINT charges will soon be debited online instead of overnight.
- SPEAKEASY is going to be updated.
- A NOTIFY step is going to be added to WYLBUR utility procedures, and a "DO" command is going to be made available to enable WYLBUR users to perform "EXEC"s from the public EXEC library.
- A remote job entry link is to be installed for Atmospheric Physics' Eclipse minicomputer.
- Trent University's synchronous IBM 3780 link to UTCS is going to be disconnected since Trent's users are shifting to an interactive environment.
- The NAG mathematical package tapes arrived recently. This product is going to be installed for a trial period. If it is used enough, we'll keep it.
- A decision was made in April to replace the McLennan Physics Undergraduate Terminal with an HSJS remote terminal in Zoology. The PIX is scheduled to be delivered on July 13. This device will sit on a channel at the main site and pretend it's a line printer. Its partner at the remote line printer site will make the line printer think that it is locally attached. This subterfuge relieves us of the more burdensome alternative of using a telecommunications access method and requisite remote station equipment.
- The ITS printer is going to be moved from the Administrative system to the Academic system.

*Terry Farley*

# LETTER TO THE EDITOR

*Editor's Note: The following letter, addressed to the editor of COMPUTERNEWS, is dated May 29/81 and is reprinted in full.*

Dear Mr. Kaponeridis:

I am writing with reference to the article entitled *Improvements to Instructional Services* by Terry Wood, which appeared on pages 5-6 of the May/June 1981 issue of *COMPUTERNEWS.* Although the article is generally accurate there are two items in the report which, as stated, may be subject to misinterpretation.

First, the article does not distinguish between what was recommended (lots), what was supported (Phase 1) and what was accepted (Phase 1). It implies that everything that was recommended has been accepted for implementation. The facts are:

continued...

**LETTER TO THE EDITOR** continued

1. The Working Group on Undergraduate Computing Facilities, appointed by the Vice-President (Research and Planning), was **not** a subcommittee of PACCFS as reported. It made recommendations in two areas: undergraduate student access to IBM based computing facilities and advanced student access to UNIX services.

   With respect to the first area, the Working Group set as a long-term goal the availability of interactive computing facilities for students. This goal was to be achieved in phases, the first of which would be the development of a system whereby the keypunch and card reader functions are performed on a video display terminal. In the second phase a student would be able to view his output at the terminal and in the third phase, a student would be able to interrupt and redirect the execution of his program.

2. The Presidential Advisory Committee on Computer Facilities and Services (PACCFS) supported the desirability of interactive computing facilities but advised the administration to proceed **only with the first phase.**

3. The administration has accepted this advice and is considering only the implementation of this first phase. The rest of the recommendations of the Working Group will be reviewed in the process of developing a long term plan for computing.

Second, I wish to clarify that the replacement of most of the card punch equipment by video display terminals is part of the first phase, not the third. More specifically, on the St. George campus,

- about 60 video display terminals will be installed. No card punches will be removed.
- when the new terminal system is operationally acceptable, additional VDTs will be installed as replacements for card punch machines.

Thus there will be a net increase of about 60 stations on the St. George campus. Similar increases are planned for the Erindale and Scarborough campuses.

I have taken the trouble to set the record straight because I wish to prevent the formation of misguided expectations.

Finally, I would like to publicize the fact that the Steering Committee that was formed by the Vice-President (Research and Planning) has been directed to serve as liaison between UTCS and the users of this new service. Therefore, I would invite inquiries and comments to be directed to any of its members.

They are:

Professor R. A. Collins, Chairman, Civil Engineering
Professor W. H. Enright, Computer Science, Scarborough College
Professor J. N. Clarke, Computer Science
Professor J.E. Paloheimo, Zoology
Mr. D. Propp, student
Mr. T. Wood, UTCS
Professor E. V. Swenson (ex-officio), Research and Planning

I would appreciate your efforts to bring these items to the attention of your readers.

Sincerely,

Eva. V. Swenson

# PERSONNEL CHANGES

Rein Mikkor, former Associate Director, has left UTCS after 10 years to work at DMR & Associates. Eugene Siciunas has assumed the Associate Directorship, vacating his previous position as CSS Manager.

Greg Girard has left again, this time to travel.

Wally Rosocha, who worked for CSS, is now working in industry.

Dawne Smith has moved from the Information Office to Text Services.

*Kathryn Bourne*

# NEW TITLES IN THE DCS LIBRARY

Abrams, M., Blanc, R.P. and Cotton, I.W.
Computer Networks: A Tutorial.
Revised and updated 1980.
New York, IEEE, 1980.

ACM SIGMOD International Conference
on Management of Data.
Proceedings. 1981.

Adkison, L., Sanders, D.H. and Fry, R.
Study guide to accompany Sanders'
Computers in Society (3d ed.)
New York, McGraw-Hill, 1981.

Association for Computing Machinery.
ACM guide to computing literature 1979.

Association for Computing Machinery.
Proceedings of the national conference,
35th, 1980.

Colloquium on Automata, Languages and
Programming.
Automata, languages and programming,
4th, 1977.

Date, C.J.
An introduction to database systems.
3d ed.
Reading, Mass., Addison-Wesley, 1981.

International Conference on Software
Engineering, 5th. San Diego, Mar. 1981.
Proceedings.

Ledin, G. and Ledin, V.
The programmer's book of rules.
Belmont, Cal., Lifetime Learning Pub., 1979.

Lewis, HR. and Papadimitriou, C.H.
Elements of the theory of computation.
Englewood Cliffs, N.J., Prentice-Hall, 1981.

McQuillan, John M. and Cerf., V.G.
A practical view of computer communications
protocols (tutorial).
New York, IEEE, 1978.

Mehlmann, Marilyn.
When people use computers: an approach
to developing an interface.
Englewood Cliffs, N.J., Prentice-Hall. 1981.

Philippakis, Andreas S. and Kazmier, L.J.
Structured COBOL. 2d ed.
New York, McGraw-Hill, 1981.

Sanders, Donald H.
Computers in society. 3d ed.
New York, McGraw-Hill, 1981.

Specifications of Reliable Software Conference,
Cambridge, Mass., Apr. 1979.
Proceedings.
New York, IEEE, 1979.

Symposium on Foundations of Computer Science,
21st. Syracuse, N.Y., Oct. 1980.
Foundations of computer science.

Tanimoto, Steven and Klinger, A., eds.

continued...

**NEW TITLES** continued

Structured computer vision: machine perception through hierarchical computation structures.
New York, Academic Press, 1980.

Thurber, Kenneth J.
Distributed processor communication architecture (tutorial).
New York, IEEE, 1979.

Traub, J.F. and Wozniakowski, H.
A general theory of optimal algorithms.
New York, Academic Press, 1980.

Winston, Patrick H. and Horn, B.K.P.
LISP.
Reading, Mass., Addison-Wesley, 1981.

Deen, S.M.
Fundamentals of data base systems.
London, Macmillan, 1977.

Harpool, Jack D.
Business data systems: a practical guide.
Dubuque, Iowa, Wm. C. Brown, 1978.

# UTCS SYSTEMS

## 3033/N8A PROCESSOR

- located in McLennan Physical Laboratories
- provides General Purpose Job Stream, High Speed Job Stream, TSO, WYLBUR
- 8 megabytes of memory
- MVS with JES2

## 3033/N8B PROCESSOR

- located in McLennan Physical Laboratories
- provides administrative IMS/VS DB/DC Batch, TSO, MVS/APL and ATMS services
- 8 megabytes of memory
- MVS with JES2

## DECSYSTEM-10 Model 1090

- located in McLennan Physical Laboratories
- provides General Purpose Time-Sharing
- 256 K - 36 bit words of memory
- TOPS-10 operating system

## COMMUNICATIONS & SMALL SYSTEMS (CSS)

- located in SF308
- DEC GT44 System with PDP-11/40 CPU
- 2 Z80 based microcomputers
- Radio Shack TRS-80
- Western Digital Pascal MicroEngine
- Apple II Plus
- DEC GT40 System with PDP-11/05 CPU
- provides specialized graphics and interactive graphics
- provides online and real-time computing services, data acquisition and minicomputer services

# UTCS DIRECTORY

| POSITION | ROOM | CENTREX PHONE NUMBER |
|---|---|---|
| **Director** | | |
| Dr. Doron Cohen | MP350 | 8948 |
| **Associate Directors** | | |
| Al Heyworth | MP350 | 4936 |
| Eugene Siciunas | MP350 | 5058 |
| **Faculty Liaison Officer** | | |
| Dr. Frank Spitzer | MP345 | 4619 |
| **Communications & Small Systems Manager** | | |
| Eugene Siciunas (Acting Manager) | MP350 | 4967 |
| **Operations Manager** | | |
| Bill Lauriston (Acting Manager) | MP350 | 7092 |
| **Systems Manager** | | |
| Ward Beattie | MP350 | 3579 |
| **Academic Computing Services Manager** | | |
| Ralph Lombardi | MP350 | 7130 |
| **Administrative Computing & Text Services Manager** | | |
| Bill Lauriston | SG201 | 6877 |
| **Services Support Manager** | | |
| Don Gibson | MP350 | 5568 |
| **Administrative Officer** | | |
| Suzan Fawcett | MP350 | 4428 |
| **Accounting & Information Services Supervisor** | | |
| Marg Doherty | EA206 | 3960 |
| General Inquiries | EA206 | 4990 |
| Accounts (U of T) | EA206 | 8702 |
| Accounts (External) | EA206 | 7148 |
| Access Codes | EA206 | 8703 |
| **Programming Services Supervisor** | | |
| Bill Lauriston | SG201 | 6877 |
| **Applications Supervisor** | | |
| Herb Kugel | SG304 | 7286 |
| **CSS Software Development Supervisor** | | |
| Terry Wood | SF307 | 6134 |

continued...

## UTCS DIRECTORY continued

| | | |
|---|---|---|
| **Text Services Supervisor** | | |
| John Bradley | MP251B | 3995 |
| **Entry Services Supervisor** | | |
| Vera Cabanus | MP331 | 5040 |
| Text Entry, Keypunching | MP331 | 4565 |
| Data Entry | MP331 | 5273 |
| **Computing Services Representatives (CSRs)** | | |
| Engineering Annex | | |
| Sue Chong | EA104 | 4357 |
| Advisors | EA103 | 4516 |
| Time-Sharing Support | | |
| John Mavity | SG204 | 7109 |
| Advisors | SG204 | 6465 |
| Erindale | | |
| Peter Wall | 2043 | 828-5311 |
| Scarborough | | |
| Bob Blackburn | | 284-3173 |
| Arts and Science | | |
| Bill Fehlner | SS2133 | 6509 |
| New Physics | | |
| Bob Chambers | MP1202 | 8823 |
| External | | |
| Ihor Prociuk | SG200 | 6875,6885 |
| **Supervisors, Operations** | | |
| Paul Scarborough (IBM 3683N8A) | MP368 | 6220 |
| Krishna Patnaik (DEC-1090) | MP368 | 4086 |
| Dave Wong (IBM 3033N8B) | MP368 | 6864 |
| **Tape Librarians** | | |
| Academic Services | MP368 | 7319 |
| Administrative Services | MP368A | 6693 |

---

**Key:**

EA = Engineering Annex
SG = 49 St. George
MP = McLennan Physical Laboratories (New Physics)
SF = Sandford Fleming
SS = Sidney Smith

**Job and System Status Queries**

| | |
|---|---|
| SYSTEM/3033N8A / TSO, WYLBUR, BATCH, ATMS, APL | 7393 |

| **Time-Sharing Services through PACX** | **Dial-Up** |
|---|---|
| DEC-1090,APL,ATMS,TSO,WYLBUR | 6200 Centrex<br>6201 Non Centrex |

UTCS
university
of toronto
computing services

## UTCS Newsletter Subscription/Information Request Form

If you wish to have your name and/or address added, changed or deleted from our Newsletter mailing list, please complete this form.

Please ____ add

____ change

____ delete my name and address.

| | |
|---|---|
| NAME and ADDRESS, in full | PREVIOUS NAME and ADDRESS, in full |
| ______________________________ | ______________________________ |
| ______________________________ | ______________________________ |
| ______________________________ | ______________________________ |

______ Check here if you can receive *COMPUTERNEWS* by campus mail.

I would like more information on ______________________________________________ .

Please have a Computing Services Representative (CSR) contact me. My phone number is:

________________________________

Comments on this issue of *COMPUTERNEWS*:

-------------------------------------------- **FOLD HERE** ------------------------------------

**Return to:**

*COMPUTERNEWS*
University of Toronto Computing Services,
Information Office,
Room 206,
11 King's College Road
Toronto, Ontario
M5S 1A1

UNIVERSITY OF TORONTO
COMPUTING SERVICES
TORONTO, CANADA

CAMPUS DELIVERY

MISS KATTA
SERIALS DEPARTMENT
ROBARTS LIBRARY
UNIVERSITY OF TORONTO